

NATIONAL WETLANDS INVENTORY

NOTES TO USERS

1:100,000 SCALE MAP

ROLLA NW

MISSOURI

NATIONAL WETLANDS INVENTORY MAP

I. INTRODUCTION

The U.S. Fish and Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. (1979) is the classification system used to define and classify wetlands. Photointerpretation conventions, hydric soils lists, and wetland plant lists are also available to enhance the use application of this classification system.

II. PURPOSE

The purpose of the notes to the users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species, and (3) to explain local geography, climate, and wetland communities.

III. STUDY AREA

Geography: The Rolla NW 1:100,000 is located in the Ozark Mountains of southern Missouri (Figure 1) and consists of 32 7.5' quads. Bailey (1980) classifies this area as being in the Oak-Hickory Forest section in his "Descriptions of the Ecoregions of the United States."

Topography consists of high relief to low rolling hills. Major drainages on this map include the Little Piney Creek, Gasconade River, Dry Fork, Norman Creek, Huzzah Creek, and Meramec River. Elevations range from approximately 900 to 1400 feet above sea level.

Climate: The climate is continental with weather changes being frequent and rapid. Average winter and summer temperatures are about 33°F and 76°F, respectively. The total annual precipitation is approximately 42 inches.

Vegetation: The majority of this study area is mostly U.S. National Forest. Oaks, hickory, maple, walnut, and elms are common trees within these forests. Some pines grow among these hardwoods. The central area of this study area presents a mixture of forested and agricultural areas. Agriculture consists of crops and pasture and is prevalent on the Salem plateau. Native vegetation consists of tall prairie grasses and deciduous forest.

Soils: The soils associated with this study area are the Molisols and Alfisols (Bailey 1980).

IV. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

TABLE - Cowardin Classification Codes and Descriptions

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
LIUB (H)	Lacustrine, limnetic, unconsolidated bottom	Lake	Unconsolidated bottom
L2UB (G,H)	Lacustrine, littoral, unconsolidated bottom	Lake, open water, marsh	Unconsolidated bottom
L2AB (G,H)	Lacustrine, littoral, aquatic bed	Lake, marsh	<u>Lemna</u> spp. (duckweed) green algae
L2EM2 (G,H)	Lacustrine, littoral, emergent, nonpersistent	Lake, marsh	<u>Scirpus</u> spp. (bulrushes)
L2US (A,C)	Lacustrine, littoral, unconsolidated shore	Beach, sandbar	Unconsolidated shore
R2UB (G,H)	Riverine, lower perennial, unconsolidated bottom	River	Unconsolidated bottom
R2US (A,C)	Riverine, lower perennial, unconsolidated shore	Beach, sandbar, mudflat	Unconsolidated shore
R3RB (G,H)	Riverine, upper perennial, rock bottom	River, stream	Rock bottom
R3UB (G,H)	Riverine, upper perennial, unconsolidated bottom	River, stream	Unconsolidated bottom
R3AB (G,H)	Riverine, upper perennial, aquatic bed	River, stream	Aquatic bed
R4SB (A,C,F)	Riverine, intermittent, streambed	Stream	Streambed
PUB (F,G,H)	Palustrine, unconsolidated bottom	Pond, reservoir, borrow pit, marsh	Unconsolidated bottom
PAB (F,G,H)	Palustrine, aquatic bed	Pond, reservoir marsh	<u>Lemna</u> spp. (duckweed) green algae <u>Potamogeton</u> spp. (pondweed) <u>Ceratophyllum demersum</u> (coontail)

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NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM (A)	Palustrine, emergent, temporary	Depression, drainage	<u>Eleocharis</u> spp. (spike rushes) <u>Ambrosia</u> spp. (ragwood) <u>Carex</u> spp. (sedges) <u>Rumex</u> spp. (dock) <u>Juncus</u> spp. (rushes) <u>Equisetum</u> spp. (horsetail) <u>Urtica dioica</u> (stinging nettle)
PEM (B)	Palustrine, emergent, saturated	Seep, fen	<u>Phragmites</u> spp. (reeds) <u>Carex</u> spp. (sedges) <u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrushes)
PEM (C)	Palustrine, emergent, seasonal	Depression, drainage	<u>Polygonum</u> spp. (smartweed) <u>Carex</u> spp. (sedges) <u>Phalaris</u> <u>arundinacea</u> (reed canary grass) <u>Juncus</u> spp. (rushes) <u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrushes)

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TABLE - Cowardin Classification Codes and Descriptions

NWI CODE (Water Regime)	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION
PEM (F,G)	Palustrine, emergent	Marsh, farm pond, backwater, oxbow	<u>Typha</u> spp. (cattail) <u>Scirpus</u> spp. (bulrushes)
PSSI (A,C,F)	Palustrine, scrub-shrub, broad-leaved deciduous	Marsh, floodplain, depression	<u>Salix</u> spp. (willow) <u>Populus deltoid</u> (cottonwood) <u>Cephalanthus</u> <u>occidentalis</u> (common button)
PFOI (A,C,F)	Palustrine, forested, broad-leaved deciduous	Marsh, floodplains, depression	<u>Salix</u> spp. (willow) <u>Ulmus americana</u> (american elm) <u>Acer</u> <u>saccharinum</u> (silver maple) <u>Acer negundo</u> (box elder) <u>Fraxinus</u> <u>pennsylvanica</u> (green ash) <u>Populus</u> <u>deltoides</u> (cottonwood) <u>Morus</u> spp. (mulberry) <u>Plantanus</u> <u>occidentalis</u> (sycamore)
PFO5 (G,H)	Palustrine, forested	Impoundment	Dead trees
FUS (A,C)	Palustrine, unconsolidated shore	Depression, shallow gravel pit	Unconsolidated shore

IV. WETLAND CLASSIFICATION CODES AND WATER REGIME DESCRIPTIONS

TABLE - Cowardin Classification Codes and Descriptions

NWI CODE (Special Modifier)	NWI DESCRIPTION	COMMON DESCRIPTION
h	Diked, impounded	Dam or levee, reservoir
x	Excavated	Dugout, farm pond, borrow pit, ditched or channelized
d	Partially drained	Tiled, ditched
s	Spoil	Mine tailings, spoil deposition

Water Regime Description

(A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.

(B) Saturated - The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.

(C) Seasonally Flooded - Surface water is present for extended periods, especially early in the growing season, but absent by the end of the growing season in most years. The water table after flooding ceases is very variable, extending from saturated to a water table well below the ground surface.

(F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.

(G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.

(H) Permanently Flooded - Water covers land surface throughout the year in all years.

(K) Artificially Flooded - The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.

V. MAP PREPARATION

The wetland classifications that appear on this National Wetlands Inventory (NWI) Base Map are in accordance with Cowardin et al. (1979). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared aerial photography. The photography was taken spring of 1983, 1984, and 1985.

Field checks of areas found within this quad were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation and soil types as well as additional input from field personnel.

Collateral data included USGS 7.5' and 15' topographic maps, USGS 7.5' orthophoto maps, SCS soil survey of Dent County in Missouri, USGS Water Resources Data for Missouri Water Year 1986, Missouri DNR Missouri Water Atlas, Missouri DNR "All Known High-Quality Fens in Missouri" 1990, and vegetation and ecoregional information.

The user of this map is cautioned that, due to the limitation of the mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photointerpretation was completed by the South Dakota Cooperative Fish and Wildlife Research Unit, SDSU, Brookings, S.D.

VI. SPECIAL MAPPING PROBLEMS AND SITUATIONS

Wetlands visited but not checksited will have the water regime in the alphanumeric label underlined.

Perennial versus intermittent streams were distinguished by using USGS topographic maps unless found different during field work or in photographic appearance. In some cases, topographic maps lying adjacent to each other are inconsistent with their intermittent and perennial classification. In these cases, the stream permanency was left to the photointerpreter's discretion.

Several sinkholes are presented as wetland on this map. Many of these are classified as seasonally flooded, although several are classified as temporarily or semipermanently flooded, and some intermittently exposed. Water regimes of sinkholes seen on the photography were not always consistent with what was seen during field verification. Therefore, classification of some sinkhole wetlands on these maps may not be completely correct because of the changing nature of sinkholes and karst topography.

Wetlands that are nonbasin and farmed at the time of photography were not delineated on the Inventory map.

Saturated wetlands, including fens, are common on this map. Most fens were identified using Missouri DNR's "All Known High-Quality Fens in Missouri," although not all fens identified by Missouri could be seen using high altitude photography.

Several losing streams are present on this map. Some smaller streams appear to lose completely underground leaving little evidence of surface flow, even during high run-off. Shrubs and trees are strongly established within the old, historic channels. Other streams flow above surface for a very short time during high water run-off, and then gradually sink (lose) into the ground and flow sub-terrain. It is not uncommon for a stream located in karst areas to disappear and reappear several times. As seen during field verification, several perennial streams have areas of intermittent flow which eventually recharge back to perennial flow. Occasionally, topographic maps show pooled water in intermittent streams. Most often, these streams were classified as seasonal with semipermanent pools.

VII. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

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To order maps only, contact:

National Cartographic Information Center
U.S. Geological Survey
507 National Center
Reston, VA 22902
1-800-USA-MAPS

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S. Geological Survey.

VIII. LITERATURE CITED

Bailey, Robert G., 1980. Descriptions of the Ecoregions of the United States. U.S. Department of Agriculture Forest Service. Miscellaneous Publications No. 1391.

Cowardin, L.M.; V. Carter; F.C. Golet and E.T. LaRue, 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, U.S. Fish and Wildlife Service. Biological Services Program, Washington, D.C. 103 pp.

Soil Survey of Dent County. U.S. Department of Agriculture, Soil Conservation Service.